

U.S.S.N. 10/707,045

9

139690NM (GEMS 0230 PA)

**Amendment(s) to the Drawing(s):**

The attached sheet of drawing includes a change to Figure 3. This sheet replaces the original sheet of Figure 3. It now has been amended to include the reference 113.

Attachment: Replacement Sheet

U.S.S.N. 10/707,045

10

139690NM (GEMS 0230 PA)

**REMARKS**

In the Office Action dated January 25, 2006, claims 1-25 are pending. Claims 1, 10, 12, 14, and 19 are independent claims from which claims 2-9, 11, 13, 15-18, and 20-25 depend respectively therefrom. Claims 1, 10, and 19 are herein amended. Claim 26 is newly added herein.

Applicant noticed that a paragraph reciting numerical references 114, 116, and 118, which are shown in Figure 3 was inadvertently omitted from the originally filed application. Please insert the above provided paragraph [0036] between originally filed paragraphs [0035] and [0036] and renumber originally filed paragraphs [0036] and [0037], as shown above. Note that the material in newly added paragraph [0036] is not new matter, but merely further describes the relationship of some of the elements of Figure 3, as originally shown in Figure 3.

Paragraphs [0033] and [0035] are also herein amended to simply further describe what is shown in Figures 1, 3, and 4. An amended Figure 3 is also herewith provided to include a reference 113 to connections shown between capacitors 112. The amendments do not introduce new matter and thus are proper.

Claims 1-5, 7-9, 12-16, 18-20, and 24-25 stand rejected under 35 U.S.C. 102(b) as being anticipated by Reisker et al. (U.S. Pat. No. 6,344,745).

Claims 1, 12, 14, and 19 recite an imaging coil having multiple end rings and a center ring that extends parallel to and coupled between the end rings. The Office Action states that Reisker shows a center ring in Figures 1A, 1B, and 9. Applicant, respectfully, traverses. Applicant is unable to find anywhere in the Reisker reference a center ring or the disclosure or suggestion thereof. In Figures 1A, 1B, and 9 Reisker discloses a resonator having a small end ring 20 and a large end ring 40 with legs 30 therebetween. All of the embodiments of Reisker only disclose the use of two end rings. There is no disclosure or suggestion of a center ring. Also, for argument sake, should one

U.S.S.N. 10/707,045

11

139690NM (GEMS 0230 PA)

identify the small end ring 20 as a center ring then Reisker again fails to disclose a center ring coupled between multiple end rings.

Claim 1 further recites the limitation of the radius of the center ring being less than the radius of the end rings. The Office Action, in stating that this limitation is shown in Reisker refers to col. 9, lines 4-10. In col. 9, lines 4-10, Reisker states that the diameter of the end rings may be greater than the diameter at the center of the resonator. Applicant submits that although the legs of a resonator may flex inward towards the center of the resonator, that does not suggest and clearly does not disclose the use of a center ring. The legs of a resonator may have different orientations and may flex inward, regardless of whether a center ring is used.

In addition to the recitation of multiple end rings and a center ring, claim 12 further recites the limitation of multiple capacitor groupings that are coupled along the end rings. Each capacitor grouping includes multiple capacitors that have a coverage area with a width greater than 5.0cm. The Office Action states that this is shown in Reisker. However, the Office Action does not provide any reference as to where in Reisker such disclosure is shown. Although Reisker discloses the pairing of capacitors along the larger end ring 40, there is no disclosure or suggestion in Reisker to form capacitor groupings along multiple end rings, to form a coverage area with such capacitors, or to form a coverage area that has a width of greater than 5.0 cm.

In addition to the recitation of multiple end rings and a center ring, claim 14 further recites that the center ring is coupled to a ground reference and has low impedance such that it is effectively shorted to the ground reference. Since Reisker fails to teach or suggest a center ring, Reisker also fails to teach or suggest the grounding of a center ring.

In addition to the recitation of multiple end rings and a center ring, claim 19 further recites that the center ring includes capacitors and connections therebetween. Since Reisker fails to teach or suggest a center ring, Reisker also fails to teach or suggest a center ring having capacitors.

U.S.S.N. 10/707,045

12

139690NM (GEMS 0230 PA)

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628. Thus, since Reisker fails to teach or suggest each and every element of claims 1, 12, 14, and 19, they are novel, nonobvious, and are in a condition for allowance. Also, since claims 2-5, 7-9, 13, 15-16, 18, 20, and 24-25 depend upon claims 1, 12, 14, and 19, respectively, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claims 6, 10-11, 17, and 21-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Reisker et al. (U.S. Pat. No. 6,344,745) in view of Burl et al. (U.S. Pat. No. 6,396,271).

Applicant submits that since claims 6, 17, and 21-23 depend from claims 1 and 14, respectively, that they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claim 10, like claim 1, recites an imaging coil that has end rings and a circumferentially conductive center ring, which extends parallel to and is coupled between the end rings. Legs are coupled between the end rings and the center ring. The legs include a first series of legs and a second series of legs. The first series of legs is coupled between a first end ring and the center ring. The second series of legs is coupled between a second end ring and the center ring.

Applicant submits that since Reisker clearly fails to disclose the use of a center ring, that Reisker also fails to teach or suggest the use of two series of legs, as claimed. Reisker only discloses the legs 30 that extend between the two end rings 20 and 40.

Burl discloses a RF birdcage coil 26 that has two tuning rings 100 and 120 coupled and rotatable therein. Each of the tuning rings 100 and 120 includes multiple tuning band conductors 120-144 that extend parallel to the legs L2-L22 of the coil 26. The tuning rings 100 and 120 are in proximity with

U.S.S.N. 10/707,045

13

139690NM (GEMS 0230 PA)

the legs L2-L22 and with capacitors on those legs. The tuning rings 100 and 120 are not electrically wired nor do they have hard connections with the legs L2-L22 and the capacitors.

The Office Action, in stating that Burl discloses a plurality of end rings that are closer to a radio frequency shield than a center ring, infers that Burl discloses a center ring. Applicant traverses. Burl, like Reisker, fails to teach or suggest the use of a center ring, as claimed. The tuning rings 100 and 120 of Burl are not coupled between end rings, but rather are located internal and proximate to an RF coil. Also, the tuning rings 100 and 120 are not coupled between two series of legs. The tuning rings 100 and 120 are in proximity with a single series of legs, namely legs L2-L22. The tuning rings 100 and 120 are not part of the birdcage 26, but rather are proximate to the birdcage 26. Furthermore, note that the tuning rings 100 and 120 are not circumferentially conductive.

Referring to MPEP 706.02(j) and 2143, to establish a *prima facie* case of obviousness the prior art reference(s) must teach or suggest all the claim limitations, see *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Thus, since both Reisker and Burl fail to teach or suggest each and every element of claims 10, it is also novel, nonobvious, and is in a condition for allowance. Since claim 11 depends from claim 10, it is also novel, nonobvious, and is in a condition for allowance for at least the same reasons.

Also, with respect to claim 14, from which claims 17 and 21-23 depend, Burl, like Reisker, fails to teach or suggest a grounded center ring. As stated above, Burl fails to teach or suggest a center ring. Regardless of whether Burl discloses a center ring, the tuning rings 100 and 120 of Burl are not grounded. There is no suggestion in Burl for such grounding.

With respect to claims 17, 21, and 22, since Burl fails to disclose the center ring as claimed, Burl also fails to disclose the center ring having capacitors, the center ring having capacitors with a low impedance, the center ring having capacitors with a low impedance at frequency levels greater than

U.S.S.N. 10/707,045

14

139690NM (GEMS 0230 PA)

or equal to 120MHz, end rings that are closer to a radio frequency shield than the center ring, and end rings that are farther away from a patient bore than the center ring. Besides, the tuning rings 100 and 120 of Burl do not have capacitors. See Figure 3A of Burl. Also, Applicant is unable to find the term "impedance" or "ground" anywhere in Burl, any inference as to the impedance or relative impedance of any capacitor disclosed therein, or any inference as to the grounding of an item through the use of frequency dependent low impedance capacitors.

Applicant submits that a majority of the asserted showings in the Office Action are recited without reference as to where in the Reisker or Burl references such showings are provided. Applicant, as stated above, is unable to find several of the originally claimed limitations in either Reisker or Burl. Thus, Applicant can only assume that the Examiner is taking Official Notice without providing concrete evidence to back up such notice. Applicant submits that such notice is improper.

Referring to MPEP 2144.03, Office Notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. The notice of facts beyond the record, which may be taken by the Examiner, must be "capable of such instant and unquestionable demonstration as to defy dispute." *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). Applicant submits that the limitations in question are not capable of such instant and unquestionable demonstration as to defy dispute. Specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *Id.* at 1091, 165 USPQ at 420-21. Any facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a

U.S.S.N. 10/707,045

15

139690NM (GEMS 0230 PA)

rejection was based. *In re Zurko*, 258 F.3d at 1386, 59USPQ2d at 1697 (Fed. Cir. 2001). The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amendable to the taking of such notice. *In re Eynde*, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973). Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge. General conclusions concerning what is "basic knowledge" or "common sense" to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection. *In re Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002). The Examiner must provide specific technical and scientific reasoning to support his or her conclusion of common knowledge. *In re Soli*, 317 F.2d at 946, 37 USPQ at 801 (CCPA 1963). Applicant submits that no specific factual findings or concrete evidence has been put forth nor has any specific technical reasoning been put forth to support the Official Notice taken. Also, if Applicant challenges a factual assertion, as Applicant does herein, as not properly officially noticed or not properly based upon common knowledge, the Examiner must support the finding with adequate evidence. See 37 CFR 1.104(c)(2).

Applicant is aware that hindsight reasoning is proper so long as it takes into account only knowledge which was within the level of ordinary skill at the time of the claimed invention was made and does not include knowledge gleaned only from the Applicant's disclosure. Applicant believes that to arrive at a conclusion of obviousness, especially in view of the above relied upon references, can only be made through the gleaning of knowledge from Applicant's disclosure. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1386, 59USPQ2d at 1697 (Fed. Cir. 2001). The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amendable to the taking of such notice. *In re*

U.S.S.N. 10/707,045

16

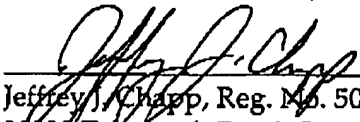
139690NM (GEMS 0230 PA)

*Eynde*, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973). Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge. General conclusions concerning what is "basic knowledge" or "common sense" to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection. *Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002). The Examiner must provide specific technical and scientific reasoning to support his or her conclusion of common knowledge. *In re Soli*, 317 F.2d at 946, 37 USPQ at 801 (CCPA 1963). Applicant submits that no specific factual findings or concrete evidence has been put forth nor has any specific technical reasoning been put forth to support the assertion of common knowledge.

In light of the amendments and remarks, Applicant submits that all of the objections and rejections are now overcome. The Applicant has added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, he is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

ARTZ & ARTZ, P.C.



Jeffrey J. Chapp, Reg. No. 50,579  
28333 Telegraph Road, Suite 250  
Southfield, MI 48034  
(248) 223-9500

Dated: March 28, 2006